BRUHATH BANGALORE MAHANAGARA PALIKE

Name of the Work : Comprehensive Development for roads and drains in ward no. 9, 10 and 11 under CMC and TMC grants, vidyaranyapura sub-division, yelahanka zone, byatarayanapura division.

Name of the Agency: M/S Ram and Company, Engineers & Contractors

REPORT FOR
The Executive Engineer
Byatarayanapura Division
Bruhat Bangalore Mahanagara Palike
Bangalore – 560 092

PROJECT MANAGEMENT CONSULTANTS

TEJUS CONSULTANTS
CONSULTING ENGINEERS AND DESIGNERS
No.58 MIG, 6th Cross, 3rd Main
1st Stage, Basaveshwaranagar
Bangalore-560079
☎ 080 - 23287532
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Name of the work: **Comprehensive Development for roads and drains in ward no. 9, 10 and 11 under CMC and TMC grants, Vidyaranyapura Sub-Division, Yelahanka zone, Byatarayanapura Division.**

Contractor/Agency	: M/S Ram and Company, Engineers & Contractors
Name of the Client	: BBMP
Estimated Cost	: 14.25 Crore
Status of Bill	: 3rd RA Bill
In the Presence of	: (a) Mr. Krishnappa Assistant Engineer, BBMP, Bangalore. (b) Mr. Basavaraj K B Assistant Engineer, BBMP, Bangalore. (c) Mr. Guru Siddappa C Gokhale Assistant Engineer, BBMP, Bangalore. : (d) Mr. Shivukumar Gouda Assistant Executive Engineer,BBMP,Bangalore : (e) Mr.Tejashwa Gowda M C, Site Engineer M/s Tejus Consultants : (f) Mr. C R Girish Contractor

AE-9 & 11 Checked

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

Sl.No	Description of Item	Comments/observation
1	KSRRB M300-1. Earth work excavation by manual means in ordinary soil involving an average horizontal throw upto 2 meters and an average lift upto 0.5m, excavated surface levelled and sides neately dressed, the disposed earth to be levelled neatly after breaking of clods complete as per specification. MORTH / Chapter 3 with all lead and lift , loading and unloading and allother incidental charges etc., complete as per specification and direction of the engineer-in-charge of the work	Work done up to the billed quantity and quality is satisfactory
2	Removing & Refixing Stone slabs of drains and Pointing in C.M(1:3) with all lead and lift , loading and unloading and allother incidental charges etc., complete as per specification and direction of the engineer-in-charge of the work	Work done up to the billed quantity and quality is satisfactory

AE-11

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4	KSRRB M200-13.1. Dismantling of existing structures like culverts, Bridges, retaining walls and other structure comprising of masonry, cement concrete, wood work, steel work, including T&P and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceble material and stacking the serviceble material with all lifts complete as per specifications. II. By mechanical means, A. Cement concrete Grade M-15 & M-20 with all lead and lift , loading and unloading and allother incidental charges etc., complete as per specification and direction of the engineer-in-charge of the work	Work done up to the billed quantity and quality is satisfactory
5	KSRB 4-1.2: Providing and laying in position plain cement concrete of mix 1:3:6 with OPC cement @ 220kgs, with 40mm and down size graded granite metal coarse aggregates @ 0.892 cum and fine aggregates @ 0.465 cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2. with all lead and lift , loading and unloading and allother incidental charges etc., complete as per specification and direction of the engineer-in-charge of the work	Work done up to the billed quantity and quality is satisfactory
6	Providing laying palin / reinforced cement concrete for Box Drain walls of thicknes 10cm to 20 cm including cenmtering shuttering form work etc. complete as per approved drawiong and design MORTH Specification No. 1500,1700,2200 PCC M 20 Grade upto 0.75 m height using concrete mixture ---- including cost and conveyance of all materials, labour charges for all items of work, hire charges equipment, with lead and lift, loading and unloading and all other incidental charges, etc., complete as per directions of the Engineer-in-charge of the work	Work done up to the billed quantity and quality is satisfactory
7	KSRB 4.9.2 :Providing T.M.T steel reinforcement for RCC work including straightening, cutting,.bending,hooking,placing in position,lapping and/or welding wherever required .typing with binding wire and anchoring to the adjoining members wherever necessary complete as per design(laps hooks and wastage shall not be measured and paid) coat of materials,labours.HOM of machinery compelete as per specification,specification No.KBS 4.6.3-TMT bars Fe-500 -For FF-with all lead and lift,loading and unloading and all other incidental charges etc..,complete as per specification and direction of the engineer- in- charges of the work	Work done up to the billed quantity and quality is satisfactory
8	Providing Cover slab of 100 mm thick for Drain in cement concrete M20 using graded granite jeiily 20mm and down size with steel r/f including form work, lift charges,curing and concrete finished surface on both side etc.., complete and as per drawing and the direction of engineer in charge(Data Rate)	Work done up to the billed quantity and quality is satisfactory
9	KSRRB M300. Scarifying Existing Bituminous surface to a depth of 50mm by Mechanical Means. Scarifying the existing bituminous road surface to a depth of 50mm and disposal of scarified material and complete as per specifications. MORTH Specification No. 305.4.3 ---- including cost and conveyance of all materials, labour charges for all items of work, hire charges equipment, with lead and lift, loading and unloading and all other incidental charges, etc., complete as per directions of the Engineer-in-charge of the work	Work done up to the billed quantity and quality is satisfactory
11	KSRRB M300-14. Excavation for roadwork in soil with hydraulic excavator of 0.90 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to embankment location and complete as per specifications. MORTH Specification No.301with all lead and lift , loading and unloading and allother incidental charges etc., complete as per specification and direction of the engineer-in-charge of the work	Work done up to the billed quantity and quality is satisfactory

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12	KSRRB M300- Construction of Embankment with Material Gravel/ Murrum. KSRRB M300-53. Construction of embankment with approved material Gravel/Murrum with all lifts and leads, transporting to site, spreading, grading to required slope and compacting to meet requirement Table 300- 2 complete as per specifications.(Including cost of gravel / murrum, watering charges & compaction by vibratory roller to 95% of proctors density) MORTH Specification No. 305 ---- including cost and conveyance of all materials, labour charges for all items of work, hire charges equipment, with lead and lift, loading and unloading and all other incidental charges, etc., complete as per directions of the Engineer-in-charge of the work	Work done up to the billed quantity and quality is satisfactory
13	KSRRB M 400-17, Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechaniqal mix plant carriage ' of mixed Material by tipper to site, laying in uniform layers with paver in sub- base/ base course on well prepared surface and compacting with vibratory roller to achieve the desired density.complete as per specifications. MORTH Specification No. 406 with all lead and lift , loading and unloading and allother incidental charges etc., complete as per specification and direction of the engineer-in-charge of the work	Work done up to the billed quantity and quality is satisfactory
14	KSRRB M 500-6, Providing and applying primer coat with SS bitumen emulsion on prepared surface of granular Base such as WBM WMM including clearing of road surface and spraying primer at the rate of 0.60 kglsqm using mechanical means complete as per specifications. As per MORTH specification clause No. 502 with all lead and lift , loading and unloading and allother incidental charges etc., complete as per specification and direction of the engineer-in-charge of the work	Work done up to the billed quantity and quality is satisfactory
15	KSRRB 500-2: Cleaning the existing black topped surface with brooms, soft brushes and finally dusting with old gunny bags and / or compressed air to receive bituminous treatement including cost of all materials, labour, HOM of machineries complete as per specifications. MORTH Spec, Chapter 5 with all lead and lift , loading and unloading and allother incidental charges etc., complete as per specification and direction of the engineer-in-charge of the work	Work done up to the billed quantity and quality is satisfactory
16	KSRRB M500-7 : Providing and applying tack coat using 80/100 grade bitumen (VG10) on prepared black topped surfaces at 2.5 Kg per 10 sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM of machineries complete as per specifications.MORTH / Chapter 5with all lead and lift , loading and unloading and allother incidental charges etc., complete as per specification and direction of the engineer-in-charge of the work	Work done up to the billed quantity and quality is satisfactory
18	KSRRB M500-19. Providing and laying bituminous concrete 30-40 mm compacted thickness with VG30 Bitumen grade using 40-60 HMP using crushed aggregates of grading II, premixed with bituminous binder at 5.4% of mix and filler, transporting the hot mix to work site, laying with a mechanical paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRT&H specification clause No. 500.9 complete in all respects as per specifications. MORTH Specification No. 509 with all lead and lift , loading and unloading and allother incidental charges etc., complete as per specification and direction of the engineer-in-charge of the work	Work done up to the billed quantity and quality is satisfactory

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19	Cement concrete pavement.Construction of un-reinforced plain cement concrete pavement, thickness as per design, over a prepared sub base with OPC cement or any other type as per clause 1051.2.2 design mix M20/M30 , with 25mm and down size graded granite metal coarse aggregates and fine aggregtes , with superplastisiser @3lts confirming to IS9103-1999 Reaffirmed-2008 , mixed in a concrete mixer of not less than 0.6 cum capacity and appropriate weigh batcher as per approved mix design, laid in approved fixed side form work (steel channel, laying and fixing of 125 micron thick polythene film, wedges, steel plates including levelling the form work as per drawing). Spreading the concrete with shovels, rackers compacted using needle, screed and plate vibrator and finished in a continuous operation including provision of contraction, expansion, construction and longitudinal joints including groove cutting charges, joint filler, separation membrane, selant primer, joint sealant, admixtures as approved, curing compound, finishing to lines and grades as per drawing complete as per specifications. - M30 (at 360Kg per cum coarse aggregate @ 0.69cum and fine aggregate @ 0.46cum) with all lead and lift , loading and unloading and allother incidental charges etc., complete as per specification and direction of the engineer-in-charge of the work	Work done up to the billed quantity and quality is satisfactory
20	Vaccum de-watering with vaccum pump and suction mat and compaction with skin floater clubbed with floating disc including cost of generator, HOM of machinery, Screed Vibratory, Power Floater, blade and disc etc., with all lead and lift.with all lead and lift , loading and unloading and allother incidental charges etc., complete as per specification and direction of the engineer-in-charge of the work	Work done up to the billed quantity and quality is satisfactory
21	Providing and fixing Pre cast solid concrete kerb stones made out of CC 1:2:4 with top and bottom width 114 and 165mm respectively, 400mm high and 450mm in length finished with CM 1:3 plastering and finishing cutting, including formwork, curing, including cost of all materials, labour, hire charges of machinery, loading, unloading, lead and lift, transportation etc., complete (P.No.25, I.No.5.30 of PW,P&IWTD S.R 2016-17)	Work done up to the billed quantity and quality is satisfactory
22	Removing and Resetting of Kerb Stones (P.NO, I.NO.37.57 OF PW,P&IWTD S.R 2016-17)	Work done up to the billed quantity and quality is satisfactory
23	KSRRB 800-1. Painting two coats after filling the surface with synthetic enamel paint in approved shades on new plastered concrete surfaces, with materials, labour complete as per specifications. MORTH Chapter 8 with all lead and lift , loading and unloading and allother incidental charges etc., complete as per specification and direction of the engineer-in-charge of the work	Work done up to the billed quantity and quality is satisfactory
24	KSRRB M800-13. Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads at 250 gms per sqm area, thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes complete as per specifications. MORTH Specification No. 803 with all lead and lift , loading and unloading and allother incidental charges etc., complete as per specification and direction of the engineer-in-charge of the work	Work done up to the billed quantity and quality is satisfactory
27	Providing and laying in position plain cement concrete of mix 1:3:6 with OPC cement @220kgs, with 40mm and down size graded granite metal coarse aggregates @ 0.892cum and fine aggregates @ 465 cum machine mixed, machine mixed,concrete laid in layers not exceeding 15 cms, thick well compacted, in foundation and plinth, including cost of all material, labour HOM Machinery curing complete as per specification,with all lead and lift , loading and unloading and allother incidental charges etc., complete as per specification and direction of the engineer-in-charge of the work	Work done up to the billed quantity and quality is satisfactory

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BBMP, Bangalore - 97

98	Exaction of removal of silt	Work done up to the billed quantity and quality is satisfactory
99	KSRB 2-1.1 ; Earthwork in surface excavation in ordinary soil	Work done up to the billed quantity and quality is satisfactory
100	KSRB 2-2.2 : Earth work excavation for foundation of buildings, culverts, water supply, sanitary lines and electrical conduits in soft soil either in pits or in trenches, 1.5m and above in width, in hard soil, exceeding 1.5m in depth including dressing the bottom and sides of pits and trenches, stacking the excavated soil clear from edges of excavation with all lead upto 50m after breaking of clods complete as per specifications.with all lead and lift , loading and unloading and allother incidental charges etc., complete as per specification and direction of the engineer-in-charge of the work	Work done up to the billed quantity and quality is satisfactory
101	KSRB 4-1.5 : Providing and laying in position plain cement concrete of mix M20 with OPC cement @ 300kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.69 cum and fine aggregates @ 0.43 cum, machine mixed, concrete laid in layers not exceeding 15cms thick well compacted, in foundation and plinth and cills, including cost of all materials, labour, HOM of machinery, curing complete as per specifications.)with all lead and lift , loading and unloading and allother incidental charges etc., complete as per specification and direction of the engineer-in-charge of the work	Work done up to the billed quantity and quality is satisfactory
102	Supply and Fixing M.S Rectangular poles made of 2 equal angles	Work done up to the billed quantity and quality is satisfactory
103	Providing of chain link	Work done up to the billed quantity and quality is satisfactory
104	Providing and fixing M.S.Block pipe of 38mm dia, od heavy gauge	Work done up to the billed quantity and quality is satisfactory
105	KSRB- 5-11 : Providing and Constration of Load Bearing Wall	Work done up to the billed quantity and quality is satisfactory
106	KSRB 15-3.9 Providing 18mm thick cement plaster in single coat	Work done up to the billed quantity and quality is satisfactory
107	Fabricating ,Supplying and erection MS anguiar Truss	Work done up to the billed quantity and quality is satisfactory
108	Supplying and fixing of Manglore Tiles	Work done up to the billed quantity and quality is satisfactory
109	KSRB-15-118.4 Providing and applying alluminium paints two coats	Work done up to the billed quantity and quality is satisfactory

Assistant Executive Engineer
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110	Providing and making precast seating arrangement including excavation laying pcc M15, providing laying M20 concrete for pedestal and seating slab, fixing of seating slab including all necessary bolt and nuts etc, complete and as per the directions of Engineer in-Charge. (Data Rate)with all lead and lift , loading and unloading and allother incidental charges etc., complete as per specification and direction of the engineer-in-charge of the work	Work done up to the billed quantity and quality is satisfactory
111	Fabricating ,Supplying and erection of...Mtrs long hot dip Galvaiized octagonal pole with BSEN 10025 grade S 355 JO steel plate for shaft,IS 2062 for base plate with door opening arrangements,including suitable boards,bakelite sheet and MCBs as per IS specifiction suitable to withstand the wind speed of 47 m/sec for .....Mtrs pole having dimensions bottom.....mm top ....mm with 3/4mm thick ,suitable base plate and 4Nos of ....long J bolts along with template and the pole shall be galvanized with not less then 65micron etc., (With out foudation-for foundationdetails refer prevailing Civil SR)(with all lead and lift , loading and unloading and allother incidental charges etc., complete as per specification and direction of the engineer-in-charge of the work	Work done up to the billed quantity and quality is satisfactory
112	Supplying of 1.1 KV class UG cable in having aluminium conductor PVC insulated, sheathed, galvanised, steel wire/steel tap armoured cable with PVC outer sheathing 1.1 KV class with all lead and lift , loading and unloading and allother incidental charges etc., complete as per specification and direction of the engineer-in-charge of the work	Work done up to the billed quantity and quality is satisfactory
115	Supplaying,and fixing of Hot dip galvanized M.S.Bracket suitable for door luminaries and shall be mounted on Octogonal pole using necessery bolts,nuts etc.,complete.(with all lead and lift , loading and unloading and allother incidental charges etc., complete as per specification and direction of the engineer-in-charge of the work	Work done up to the billed quantity and quality is satisfactory
116	Supplying High pressure sodium vapour street light fitting die cast alluminium canopy with aluminum housing for control gear, finished stove enamel gray glassy white canopy interior with a pair of anodized aluminum reflectors clear acrylic bowl, gasket lining for drip inseat resistance duly wired with porcelain holder copper wound ballast, igniter and HPF condenser including a sodium vapour lamp.)with all lead and lift , loading and unloading and allother incidental charges etc., complete as per specification and direction of the engineer-in-charge of the work	Work done up to the billed quantity and quality is satisfactory
117	Supply, installtion, testing and commissioning of STREET LIGHT PANEL made up of 16SWG CRCA sheet for body and 14 SWG CRCA sheet for door, outdoor type, floor mounting, powder coated,Degree of projection IP56, with necessary hard ware, interconnection wiring & accessories complete comprising of the following Incomming : 63A 4P 10KA MCB + 2 nos. 32A 3P AC1 contactor + 2 nos. 24hrs Timer Outgoings :18 Nos 20A 10KA SP MCB with all lead and lift , loading and unloading and allother incidental charges etc., complete as per specification and direction of the engineer-in-charge of the work	Work done up to the billed quantity and quality is satisfactory
137	Supplying and Fixing of heavy duty cable glands suitable or UG cable o 1.1KV class (metal only)	Work done up to the billed quantity and quality is satisfactory
138	Digging of trench of 0.6 deep × 0.50 mts	Work done up to the billed quantity and quality is satisfactory

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

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No. TC / BBMP / BYT PURA DIVISION/ 0223 / 17 – 18

Date: 30/4/2018

To

The Executive Engineer

Byatarayanapura Division

Bruhat Bangalore Mahanagara Palike

Bangalore – 560 092

Dear Sir

Sub: **Third RA bill for the work of Comprehensive Development for Roads and Drains in Ward no. 9, 10 and 11 Under CMC and TMC Grants, Vidyaranyapura Sub-Division, Yelahanka Zone, Byatarayanapura Division.**

In reference to the above subject, this is to bring to your kind notice that we have scrutinized the **Third RA bill** submitted by M/S Ram and Company, Engineers & Contractors. # 10,3rd Floor, Puttaiah Compound, 80 Ft Road, Ashwath Nagar, RMV 2nd Stage Banglore-94, towards the above said work and arrived at an amount of **Rs. 3,14,24,312.39/-(Rupees Three Crore Fourteen Lakh Twenty Four Thousand Three Hundred and Twelve Paise Thirty Nine Only**). The work has been completed satisfactorily.

This is for your kind information.

Thank you and assuring you the best of our Services at all the times

For Tejus Consultants
(Nischal M)

TEJUS CONSULTANTS

TEJUS CONSULTANTS
No. 58, 3rd main, 6th Cross, 1st Stage KHB Colony, Basaveshwaranagar, Bangalore - 560079, O : +91 80 23287532, tejusconsultants@gmail.com

BRUHATH BANGALORE MAHANAGARA PALIKE

BYATARAYANAPURA DIVISION

Name of the work: Comprehensive Development for Roads and Drains in Ward no. 9, 10 and 11 Under CMC and TMC Grants, Vidyaranyapura Sub-Division, Yelahanka Zone, Byatarayanapura Division.

Third RA Bill
Test Reports

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Test Report on Cement

Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	M/S Ram and Company, Engineers & Contractors.
Sample ID	Cement
Date of Sample Tested	22.02.18
Sample Supplied By	Agency

Sl.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	40 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	338 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	4 mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	29.00%	

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Vidyaranyapura Sub Division
BBMP, Bangalore - 97

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike
Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/S Ram and Company, Engineers & Contractors
Total Weight in gm:	3000

SIEVE ANALYSIS

Type of Material	40 mm down size			Proposed Use	PCC
Sample Location	At Site			Date of Sampling	22.02.18
				Date of Testing	22.02.18

IS Sieve Size	Weight Retained in gm	Cum. Weight Retained in gm	Cumulative Weight Retained in %	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA-2007)
					% of Passing For Graded Aggregate of Nominal Size
80.00mm	0	0	0.00	100.00	100
63.00mm	0	0	0.00	100.00	-
40.00mm	100	100	3.33	96.67	95-100
20.00mm	1522	1622	54.07	45.93	30-70
10.00mm	792	2414	80.47	19.53	10-35
4.75mm	462	2876	95.87	4.13	0-5
Pan	124	3000	100.00	0.00	

Remarks : Satisfactory / Not Satisfactory

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Consultant's Representative

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Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

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TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/S Ram and Company, Engineers & Contractors

SPECIFIC GRAVITY AND WATER ABSORPTION

FINE AGGREGATE (IS-2386-PART-3)

Type of Material	Fine aggregate (River Sand)/ M Sand	Proposed Use	Road concrete/PCC
Location/Source	At Plant/ Site	Date of Sampling	22.02.18
Period of Soaking	24 hours	Date of Testing	22.02.18

Sl. No.	Test Property	TRIAL - 1	TRIAL - 2	TRIAL - 3	Average
A	Weight of sturated surface dry sample gm.	680	642	622	
B	Weight of oven - dry sample gm.	668	631	612	
C	Weight of Pycnometer Filled with water gm	1275	1275	1275	
D	Weight of Pycnometer + sample + water gm	1703	1680	1667	
E	Bulk specific gravity $\frac{B}{(C+A-D)}$	2.651	2.662	2.661	2.658
G	Absorption (%) $\frac{(A-B)*100}{B}$	1.796	1.743	1.634	1.725

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BBMP, Bangalore - 97

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TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/S Ram and Company, Engineers & Contractors

SIEVE ANALYSIS

Total Weight:	3000 gms				
Type of Material	Fine aggregate (River Sand)/ M Sand		Proposed Use	Road concrete/PCC	
Sample Location	At Plant/ Site		Date of Sampling	22.02.18	
			Date of Testing	22.02.18	
IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing (Zone-II)
10.00 mm	0	0	0	100.00	100
4.75 mm	192	192	6.40	93.60	90 - 100
2.36 mm	432	624	20.80	79.20	75 - 100
1.18 mm	622	1246	41.53	58.47	55 - 90
0.600 mm	432	1678	55.93	44.07	35 -59
0.300 mm	622	2300	76.67	23.33	8-30
0.150 mm	422	2722	90.73	9.27	0 - 10
Pan	278	3000			-

Remarks : Satisfactory / Not Satisfactory

AE

Consultant's Representative

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

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Test Report on Cement

Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	M/S Ram and Company, Engineers & Contractors.
Sample ID	Cement
Date of Sample Tested	26.02.18
Sample Supplied By	Agency

Sl.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	32 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	338 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	3 mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	29.00%	

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Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97
AE

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike	
Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.	
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore	
Contractor	M/S Ram and Company, Engineers & Contractors	
Total Weight:	10000	gms

SIEVE ANALYSIS

Type of Material	20 mm down size		Proposed Use	CC Road	
Sample Location	Plant		Date of Sampling	26.02.18	
			Date of Testing	26.02.18	
IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing
40.00 mm	0	0	0	100	100
20.00 mm	292	292	2.92	97.08	95 - 100
10.00 mm	4742	5034	50.34	49.66	25 - 55
4.75 mm	4232	9266	92.66	7.34	0 - 10
Pan	734	10000			

Remarks : Satisfactory / Not Satisfactory

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Vidyaranyapura Sub Division
BBMP, Bangalore - 97

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike	
Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.	
Consultants	TEJUS CONSULTANTS	
Contractor	M/S Ram and Company, Engineers & Contractors	
Total Weight:	8600	gms

SIEVE ANALYSIS

Type of Material	12.5 mm down size		Proposed Use	CC Road	
Sample Location			Date of Sampling	26.02.18	
			Date of Testing	26.02.18	
IS Sieve Size (in mm)	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing
20.0	0	0	0	100	100
12.5	334	334	3.88	96.12	90-100
10.0	2820	3154	36.67	63.33	40-85
4.75	4682	7836	91.12	8.88	0-10
Pan	178	8014			
Total	8600				

Remarks : Satisfactory / Not Satisfactory

TEJUS CONSULTANTS

Consultant's Representative

AE

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

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TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/S Ram and Company, Engineers & Contractors

SPECIFIC GRAVITY AND WATER ABSORPTION
FINE AGGREGATE (IS-2386-PART-3)

Type of Material	Fine aggregate (River Sand)/ M Sand	Proposed Use	Road concrete/PCC
Location/Source	At Plant/ Site	Date of Sampling	26.02.18
Period of Soaking	24 hours	Date of Testing	26.02.18

Sl. No.	Test Property	TRIAL - 1	TRIAL - 2	TRIAL - 3	Average
A	Weight of sturated surface dry sample gm.	600	622	652	
B	Weight of oven - dry sample gm.	592	611	643	
C	Weight of Pycnometer Filled with water gm	1275	1275	1275	
D	Weight of Pycnometer + sample + water gm	1652	1668	1686	
E	Bulk specific gravity $\frac{B}{(C+A-D)}$	2.655	2.668	2.668	**2.664**
G	Absorption (%) $\frac{(A-B)*100}{B}$	1.351	1.800	1.400	**1.517**

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TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/S Ram and Company, Engineers & Contractors

SIEVE ANALYSIS

Total Weight:	3000 gms			
Type of Material	Fine aggregate (River Sand)/ M Sand	Proposed Use	Road concrete/PCC	
Sample Location	At Plant/ Site	Date of Sampling	26.02.18	
		Date of Testing	26.02.18	

IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing (Zone-II)
10.00 mm	0	0	0	100.00	100
4.75 mm	192	192	6.40	93.60	90 - 100
2.36 mm	462	654	21.80	78.20	75 - 100
1.18 mm	618	1272	42.40	57.60	55 - 90
0.600 mm	443	1715	57.17	42.83	35 -59
0.300 mm	607	2322	77.40	22.60	8-30
0.150 mm	442	2764	92.13	7.87	0 - 10
Pan	236	3000			-

Remarks : Satisfactory / Not Satisfactory

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Test report on Compressive strength of concrete cubes

Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	M/S Ram and Company, Engineers & Contractors
Grade of concrete:	M20
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	26.02.18	05.03.18	7 days	8.152	22500	306	13.60	13.70
2	26.02.18	05.03.18	7 days	8.200	22500	308	13.69	
3	26.02.18	05.03.18	7 days	8.172	22500	311	13.82	

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Test report on Compressive strength of concrete cubes

Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	M/S Ram and Company, Engineers & Contractors
Grade of concrete:	M20
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	26.02.18	26.03.18	28days	8.222	22500	452	20.09	20.16
2	26.02.18	26.03.18	28days	8.218	22500	453	20.13	
3	26.02.18	26.03.18	28days	8.220	22500	456	20.27	

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PRECAST SLAB (CORE) TEST REPORT

Client	:	Bruhat Bangalore Mahanagara Palike
Contractor	:	M/S Ram and Company, Engineers & Contractors.
Name of Work	:	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
No.of Sample Tested	:	3
Date of Testing	:	05.03.18
Techinical Reference	:	IS:516-1959 (Reaffirmed 1999), SP-24:1983.
Grade of Concrete	:	M_{20}. 100mm thick

Sl. No.	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m^3)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm^2)	Correction Factor for the Dia. (Strength of the Core x 1.08)	Corrected Cylinder Compressive Strength (N/mm^2)	Equivalent Cube Compressive Strength (N/mm^2)
1	50.00	90.00	0.458	2591.75	1.80	0.960	37.10	18.89	20.41	19.59	24.49
2	50.00	90.00	0.462	2614.39	1.80	0.960	37.10	18.89	20.41	19.59	24.49
3	50.00	90.00	0.438	2478.57	1.80	0.960	37.82	19.26	20.80	19.97	24.96

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported reported within 15days from the date of testing.

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Consultant's Representative

Name of Work	:	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Client	:	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	:	M/s Tejus Consultants
Contractor	:	M/S Ram and Company, Engineers & Contractors.
Date of Testing	:	01.03.18
Type of Mix	:	WMM
Sample I/D	:	WMM 2

GRADATION FOR WMM
(As per MORT&H 400-11)

Sample Location:	At plant	**Date of Sampling:**	01.03.18
		Date of testing:	01.03.18
Type of material & Purpose:	WMM	**Oven Dry Wt.(gms):**	10000.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	342	342	3.42	96.58	95-100
22.4	2462	2804	28.04	71.96	60-80
11.2	2658	5462	54.62	45.38	40-60
4.75	1542.0	7004	70.04	29.96	25-40
2.36	968.0	7972	79.72	20.28	15-30
0.6	752.0	8724	87.24	12.76	8.0-22.0
0.075	674.0	9398	93.98	6.02	0-8
Pan	602.0				
Total	10000.0				

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Client	:	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	:	M/s Tejus Consultants
Contractor	:	M/S Ram and Company, Engineers & Contractors.
Date of Testing	:	01.03.18
Type of Mix	:	WMM
Sample I/D	:	WMM 1

GRADATION FOR WMM
(As per MORT&H 400-11)

Sample Location:	At plant	**Date of Sampling:**	01.03.18
		Date of testing:	01.03.18
Type of material & Purpose:	WMM	**Oven Dry Wt.(gms):**	10000.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	566	566	5.66	94.34	95-100
22.4	2422	2988	29.88	70.12	60-80
11.2	1782	4770	47.70	52.30	40-60
4.75	1380.0	6150	61.50	38.50	25-40
2.36	1422.0	7572	75.72	24.28	15-30
0.6	782.0	8354	83.54	16.46	8.0-22.0
0.075	888.0	9242	92.42	7.58	0-8
Pan	758.0				
Total	10000.0				

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Client	**BRUHAT BANGALORE MAHANAGARA PALIKE**
Consultant	**M/s Tejus Consultants**
Contractor	**M/S Ram and Company, Engineers & Contractors.**

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Type of Material	WMM	**Proposed Use**	**WMM**
Sample Location	At plant	**Date of Sampling**	**01.03.18**
		Date of Testing	**01.03.18**

Size of aggregate		**Flakiness Index**		**Elongation Index**	
Passing through IS sieve, mm	**Retained on IS sieve, mm**	**Total wt. of aggregate retained on sieves (A) gms.**	**Wt. of aggregate passing from Flakiness gauge (B) gms**	**Wt. of aggregate retained on Flakiness gauge (C) gms**	**Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms**
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	900	52	848	88
16.0	12.5	110	62	48	122
12.5	10.0	775	72	703	52
10.0	6.3	625	52	573	62
Total		**2410**	**238**	**2172**	**324**

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	9.88
Elongation Index(%):	14.92
Combined FI+EL (%)	24.79

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Client	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	M/s Tejus Consultants
Contractor	M/S Ram and Company, Engineers & Contractors.

AGGREGATE IMPACT VALUE
(IS: 2386 Part - 4)

Proposed Use	WMM	**Date of Sampling**	**01.03.18**
Sample Location	**At plant**	**Date of Testing**	**01.03.18**

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	386.00	358.00	364.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	296.00	282.00	283.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	90.00	76.00	81.00	
4	Aggregate Impact Value (%)	(Wc/Wa)*100	23.32	21.23	22.25	
5	Average Aggregate impact value	(%)	22.27			Max - 30 %

Remarks : Satisfactory / Not Satisfactory

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